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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,573	01/18/2002	Tetsuo Yamada	Q66582	7082

7590 01/14/2005

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC  
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Washington, DC 20037-3202

EXAMINER
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GAGLIOSTRO, KEVIN M

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/050,573	YAMADA ET AL.	
	Examiner	Art Unit	
	Kevin M. Gagliostro	2615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/18/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. 10050573.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Title Objections***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "A Charge Read-out Method and Solid-State Imaging Device Capable of Shortening Read-Out Time Charges Stored in a Plurality of Linearly Arranged Light Receiving Units."

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for rejections under this section made in this office action:

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,144,407 to Mizutani et al.

Mizutani clearly shows all of the limitations cited in claim 1. See all material cited in the specification. Referring to claim 1, Mizutani describes a charge read-out method comprising the step of moving charges into a plurality of charge transfer paths (or vertical / horizontal charge transfer areas) (figure 3, items 17 and 23) disposed on both sides along a row of a plurality of light receiving units (or light receiving areas) (figure 3, item 16) arranged linearly (which are, in fact, rowed up in horizontal and vertical lines). Referring to figure 3, these charge transfer paths (particularly, item 17) are disposed on both sides of the light receiving units (item 16) as they are in the areas left and right of the light receiving units. Also, referring to figure 3, these light receiving units (item 16) are arranged linearly, in that they are rowed in plural formation vertically and horizontally. Mizutani further describes a charge read-out method comprising the step of the charges being generated and stored in the plurality of light receiving units (or light receiving areas) (figure 3, item 6) having received lights (column 4, lines 52-55). Mizutani even further describes a charge read-out method comprising the step of transferring the moved charges by way of charge transfer areas (figure 3, items 17 and 23) (column 4, lines 55-56) where they are transferred along the light receiving paths disposed on both sides (previously described) of the plurality of light receiving units (or light receiving areas) (figure 3, item 16). Mizutani lastly describes a charge read-out method comprising the step of outputting the moved charges along the light receiving paths disposed on both sides of the plurality of light receiving units. Specifically, this outputting is described as an

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output portion that converts the charges transferred through the charge transfer area into an image pickup signal (column 4, lines 58-60).

Mizutani clearly shows all of the limitations cited in claim 2. See all material cited in the specification. Referring to claim 2, Mizutani describes a solid-state imaging device comprising a plurality of light receiving units (or light receiving areas) (figure 3, item 16) arranged linearly (which are, in fact, rowed up in horizontal and vertical lines) for receiving light to generate and store charges (column 4, lines 52-55). Mizutani further describes a solid-state imaging device comprising a plurality of charge transfer paths (or vertical / horizontal charge transfer areas) (figure 3, item 17 and 23) disposed on both sides of said plurality of light receiving units (or light receiving areas). Referring to figure 3, these charge transfer paths (particularly, item 17) are disposed on both sides of the light receiving units (item 16) as they are in the areas left and right of the light receiving units. Mizutani further describes transferring the moved charges by way of charge transfer areas (figure 3, items 17 and 23) (column 4, lines 55-56) where they are transferred along the light receiving paths disposed on both sides (previously described) of the plurality of light receiving units (or light receiving areas) (figure 3, item 16). Mizutani lastly describes a charge read-out method comprising the step of outputting the moved charges along the light receiving paths disposed on both sides of the plurality of light receiving units. Specifically, this outputting is described as an output portion that converts the charges transferred through the charge transfer area into an image pickup signal (column 4, lines 58-60). Mizutani further describes a solid-state imaging device comprising a controller for moving the charges stored in said plurality of light receiving units into said plurality of charge transfer paths, and for transferring and outputting the charges moved into said plurality of charge transfer paths disposed on both sides of said plurality of light receiving units. Specifically, Mizutani describes this controller as a controller unit (figure 2, item 33) (column 9, lines 63-67 and column 10, lines 1-12).

Mizutani clearly shows all of the limitations cited in claim 3. See all material cited in the specification. Referring to claim 3, Mizutani describes the solid-state imaging device according to claim 2, wherein each of said plurality of light receiving units includes a plurality of segments (plurality of light receiving areas can be viewed as segments as well) (figure 3, item 16) separated by a potential barrier (or vertical / horizontal charge transfer areas) (figure 3, item 17 and 23) so that charges stored in said plurality of light receiving units are moved to said plurality of charge transfer paths.

Mizutani clearly shows all of the limitations cited in claim 4. See all material cited in the specification. Referring to claim 4, Mizutani describes the solid-state imaging device according to claim 3 wherein the plurality of segments are four segments obtained by separating each of said plurality of light receiving units with a cruciform potential barrier. The segments suggested in claim 3 (Mizutani: figure 3, item 16)

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can in fact comprise four segments since they make up a "plurality" of segments. Referring to figure 3 (items 16), the light receiving areas (or segments) shows a plurality that can, in fact, comprise four segments (upper left hand corner of figure 3). Mizutani further describes these four segments as being obtained by separating each of the said plurality of light receiving units (or light receiving areas) (figure 3 and 4, items 16) with a cruciform potential barrier (or channel stop areas) (figure 4, items 19) that is shown with an overflow control area (figure 4, item 20) that extends vertically and is provided around each of the light receiving areas (item 16) (column 7, lines 15-21). This potential barrier does, in fact make up a cruciform pattern.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Gagliostro whose telephone number is 703-308-6070. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Gagliostro

1/10/2005



NGOC-YEN VU  
PRIMARY EXAMINER